

REMARKS

Claims 1-13, 15 and 18-23 are pending in the application, with Claims 1 and 13 being independent. Claim 17 has been cancelled without prejudice and Claims 1-12 remain withdrawn. Claim 13 has been amended to recite the features of cancelled Claim 17. Applicants submit that no new matter has been added.

Claims 13, 15, 17, 18 and 23 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 6,511,736 (Asano et al.) in view of any one of JP 10-129112, WO 01/25534 (Darsillo et al.) and EP 0 732 219 (Hirose et al.). Claims 13 and 19-21 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Asano et al. in view of any of JP 10-129112, Darsillo et al. and Hirose et al., and further in view of U.S. Patent 6,200,670 (Hosoi et al.) or U.S. Patent No. 5,759,673 (Ikezawa et al.). Claims 13 and 22 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Asano et al. in view of any of JP 10-129112, Darsillo et al. and Hirose et al. and further in view of U.S. Patent No. 5,985,425 (Tomizawa et al.). These rejections are respectfully traversed.

Applicants' invention as recited in independent Claim 13, as amended, is directed to a method of manufacturing a recording medium including a base material and an ink-receiving layer provided on the base material and containing a particulate material. The method includes the steps of producing a coating layer by applying a coating solution containing the particulate material containing particles of crystalline aluminum oxide to the base material followed by drying, applying water to the coating layer to cause swelling and pressing the surface of the swelled coating layer against a heated mirror-surface drum to produce the ink-receiving layer so as to have a specular gloss of the surface thereof not less than 20% as measured at 20°.

The particulate material contains particulate aluminum oxide at not less than 70 wt %. The ink-receiving layer contains a binder, and the mixing ratio of the particulate aluminum oxide to the binder is within a range of between 5:1 and 25:1 by weight. The base material includes a fibrous substrate having a surface layer thereon, and the fibrous substrate has a Stöckigt sizing degree of 100 seconds or more. The average particle diameter of the aluminum oxide particles is not more than 0.3 μ m and not less than 80% of the total aluminium oxide particles have a particle diameter of not more than 1.0 μ m.

Thus, with the present invention, a recording medium having a single-layer ink-receiving layer containing crystalline aluminum oxide particles on a base material can have both high glossiness and ink absorptivity. To achieve these features, a particular ink-receiving layer is formed on a base material having a high sizing degree by the wet-cast method. As described at page 24, line 4 to page 25, line 1 of Applicants' specification, in the wet-cast method, a coating liquid is applied to a base material and dried to form a coating layer. Then, water is applied to swell the coating layer, and the surface of the swelled coating layer is pressed against a heated mirror-surface drum and dried.

Additionally, as recited at page 16, lines 10-27 of Applicants' specification, to achieve high glossiness through a cast treatment, the average particle diameter of the aluminum oxide particles should not be more than 0.3 μ m and not less than 80% of the total aluminum oxide particles should have a particle diameter of not more than 1.0 μ m. Further, as recited at page 18, line 21 to page 20, line 1 of Applicants' specification, to help achieve good ink absorbency and have a high level of glossiness, the specified crystalline aluminum oxide particles are used because initially they can be randomly oriented, resulting in the formation of interspaces

between the crystalline aluminum oxide particles. Thus, when a small amount of water is applied during a re-wet cast treatment process, the water will quickly get in to the interspaces, causing swelling of the ink-receiving layer and rearrangement of the crystals. With the specified aluminum oxide particles, even after the re-wet cast treatment, some interspaces remain. Finally, as specified at page 22, lines 2-9 of Applicants' specification, using the specified aluminum oxide particles can help reduce the amount of binder, resulting in a recording medium that can have high ink absorbency.

Asano et al. is directed to a recording medium having excellent gloss and high color density. To achieve these properties, the recording medium of Asano et al. employs a multi-layered ink fixing layer formed on a substrate. As recited at column 7, line 23, the outermost layer of the multi-layer ink fixing layer is a gloss layer and, as recited at column 9, lines 51-58, at least one intermediate layer of the multi-layer ink fixing layer contributes to enhancing the uniform absorption of ink. Thus, Asano et al. teaches a multi-layered ink fixing layer to achieve high gloss and ink absorption, whereas, the recording medium according to Applicants' Claim 13 can achieve high ink absorptivity and glossiness with a single layer ink-receiving layer. Further, as the Examiner recognizes, Asano et al. does not teach or suggest use of crystalline aluminum oxide or that the specular gloss is not less than 20% as measured at 20°, as recited in Claim 13. Additionally, Applicants submit that Asano et al. does not teach or suggest that the average particle diameter of the aluminum oxide particles is not more than 0.3 μm and not less than 80% of the total aluminum oxide particles have a particle diameter of not more than 1.0 μm , as recited in Claim 13.

JP 10-129112, Darsillo et al. and Hirose et al. were cited for disclosing use of crystalline aluminum oxide in an ink-receiving layer. Hosoi et al. and Ikezawa et al. were cited for their teachings regarding the use of barium sulfate. Tomizawa et al. was cited for its teaching of an alumina-containing layer on the side opposite the recording layer. None of these references, whether viewed alone or combined with Asano et al. in the manner suggested by the Examiner, are seen to teach or suggest a recording medium formed by the process and having the features of the recording medium recited in Applicants' Claim 13. Thus, none of the secondary and tertiary references are seen to remedy the deficiencies of Asano et al.

Accordingly, Applicants submit that none of the cited documents, whether taken alone or in combination (assuming a combination is proper) teach or suggest important features of Applicants' presently claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103 rejections.

For the foregoing reasons, Applicants submit that the present invention is patentably defined by independent Claim 13. Dependent Claims 15 and 18-23 are also allowable, in their own right, for defining features of the present invention in addition to those recited in the independent claim. Individual consideration of the dependent claims is requested.

Applicants also respectfully request that this Amendment After Final be entered. This Amendment was not presented earlier as it was earnestly believed that the claims on file would be found allowable. Given the Examiner's familiarity with the application and the fact that this Amendment does not raise any new issues, Applicants believe that a full understanding and consideration of this Amendment would not require undue time or effort by the Examiner. Moreover, Applicants submit that this Amendment places the application in

condition for allowance. Accordingly, entry of this Amendment is believed to be appropriate and such entry is respectfully requested.

Applicants submit that the present application is in condition for allowance. Favorable reconsideration, withdrawal rejection set forth in the above-noted Office Action, rejoinder of withdrawn Claims 1-12 and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mark A. Williamson", written over a horizontal line.

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